# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 10/072,399 | 02/05/2002 | Ramkartik Mulukutla | 020431.1021 | 4786 |

| 5073 | 7590 | 07/14/2004 |
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| ART UNIT | PAPER NUMBER |
|---|---|
| 2177 | |

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The *MAILING DATE* of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>05 February 2002</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-35</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-35</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**
1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1.     This communication is in response to the Application filed on February 05, 2004.

The application has been examined. Claims 1-35 are pending in this Office

Action.

### *Specification*

2.     The use of the trademark SMALLTALK<sup>TM</sup>, JAVA<sup>TM</sup> etc in page 2 and subsequent

pages have been noted in this application.  It should be capitalized wherever it appears

and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the

proprietary nature of the marks should be respected and every effort made to prevent

their use in any manner which might adversely affect their validity as trademarks.

### *Claim Rejections - 35 USC § 103*

3.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors.  In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary.  Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

4.      Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Murali M. Krishna ('Krishna' hereinafter), USP 5,412,804 in view of Simon Guy Williams

('Williams' hereinafter), USP 6,735,593.

With respect to claim 1,

Krishna discloses a method for retrieving hierarchical data from relational

database (see col. 4, lines 46-47, Figs. 1-3), comprising the steps of:

creating a query retrieving said hierarchical data, said query including at least

one join term (see col. 3, lines 30-39, Krishna);

selecting, for said query, driving table from plurality of database tables including

said hierarchical data (see col. 4, lines 55-59, Fig. 2, Krishna); and

imposing, for said query, at least one restriction at least one table said plurality of

database tables including said hierarchical data (see col. 6, lines 65 to col. 7, lines 2,

Fig. 2, Krishna).

Krishna does not explicitly indicate the claimed hierarchical data.

Williams discloses claimed hierarchical data (the record is an explicit feature of

the hierarchical and network data models and closely corresponds to the tuple in the

relational model, see col. 41, lines 46-48, Williams).

It would have been obvious to one ordinary skill in data processing art at the time

of the present invention to combine the teachings of the cited references because

hierarchical data of Williams teaching would have allowed Krishna's system to provides

plurality of items wherein each item representing an entity or verb and creating a

plurality of links and each link representing an association defined by a verb and at least

two entities as suggested by Williams at col. 3, lines 45-48.

As to claim 2,

Krishna teaches replicating frequently searched entities into said driving table

(see col. 6, lines 65 to col. 7, lines 2, Fig. 2, et seq, Krishna).

As to claim 3,

Krishna teaches performing partial denormalization by replicating frequently

searched information into said driving table (see col. 6, lines 19-25 et seq, Krishna).

As to claim 4,

Krishna teaches creating surrogate column on said driving table, said surrogate

id column storing a sequence of increasing integer values as records are inserted into

said driving table (see col. 5, lines 8-10 et seq, Krishna).

As to claim 5,

Krishna teaches sending said query to said relational database (see col. 5, lines

45-47, Figs. 1-3).

As to claim 6,

Krishna teaches creating a fetch instruction for said query, said fetch instruction including number of rows of said hierarchical data be retrieved (see col. 5, lines 46-50, Figs. 1-3).

As to claim 7,

Krishna teaches creating a fetch instruction for said query, said fetch instruction causing ordering performed before row numbers are assigned (see col. 5, lines 63-67, Figs. 1-3).

As to claim 8,

Krishna teaches creating a Cursor (see col. 4, lines 46-47, Figs. 1-3);

sending said Cursor URL forming said query based on said Cursor URL (see col. 6, lines 30-35, Fig. 1); and

sending said query to said relational database (see col. 4, lines 46-47, Figs. 1-3).

Krishna does not explicitly indicate the claimed URL.

Williams discloses claimed URL  see col. 21, lines 66-67, Williams).

It would have been obvious to one ordinary skill in data processing art at the time of the present invention to combine the teachings of the cited references because URL of Williams teaching would have allowed Krishna's system to provides plurality of items wherein each item representing an entity or verb and creating a plurality of links and each link representing an association defined by a verb and at least two entities as suggested by Williams at col. 3, lines 45-48.

As to claim 9,

Krishna teaches sending said query to said relational database, said query

including said at least one join term and said at least one restriction imposed on said at

least one table of said plurality of database tables including said hierarchical data (see

col. 6, lines 65 to col. 7, lines 2, Fig. 2, Krishna).

As to claim 10,

Krishna teaches wherein said at least one table of said plurality of database

tables including said hierarchical data comprises said driving table.

As to claim 11,

Krishna teaches creating an address field, said address field including Surrogate

Cursor Id, maximum or minimum value ordering said retrieving by column, and a name

of a column associated with said ordering (see col. 8, lines 40-45 et seq, Fig. 1);

sending said address field to a server, said server forming said query based on a

Cursor URL (see col. 4, lines 46-47, Figs. 1-3, Krishna); and

sending said query to said relational database (see col. 4, lines 46-47, Figs. 1-3).

Krishna does not explicitly indicate the claimed URL.

Williams discloses claimed URL  see col. 21, lines 66-67, Williams).

It would have been obvious to one ordinary skill in data processing art at the time

of the present invention to combine the teachings of the cited references because URL

of Williams teaching would have allowed Krishna's system to provides plurality of items

wherein each item representing an entity or verb and creating a plurality of links and

each link representing an association defined by a verb and at least two entities as

suggested by Williams at col. 3, lines 45-48.

As to claim 12,

Krishna teaches wherein said relational database comprises a DB2 database

system (see col. 4, lines 46-47, Figs. 1-3, Krishna).

As to claim 13,

Krishna teaches wherein said relational database comprises an Oracle database

system (see col. 4, lines 46-47, Figs. 1-3).

As to claim 14,

Krishna teaches wherein said query comprises a query formatted in SQL (see

col. 8, lines 60-67, Krishna).

Claim 15 has same subject matter as of claim 1 except a data base and a user

interface, said user inter face coupled to said database and operable to and Krishna

teaches at see col. 4, lines 46-47, Figs. 2 and 19 and essentially rejected for the same

reasons as discussed above.

Krishna does not explicitly indicate the claimed hierarchical data.

Williams discloses claimed hierarchical data (the record is an explicit feature of

the hierarchical and network data models and closely corresponds to the tuple in the

relational model, see col. 41, lines 46-48, Williams).

It would have been obvious to one ordinary skill in data processing art at the time

of the present invention to combine the teachings of the cited references because

hierarchical data of Williams teaching would have allowed Krishna's system to provides

plurality of items wherein each item representing an entity or verb and creating a

plurality of links and each link representing an association defined by a verb and at least two entities as suggested by Williams at col. 3, lines 45-48.

Claims 16-25 have same subject matter as of claims 5, 6, and 8-14 respectively and essentially rejected for the same reasons as discussed above.

Claims 26-20 have subject matter as of claims 1, 5, 6, 8, and 9 respectively and essentially rejected for the same reasons as discussed above.

Claims 31-35 have subject matter as of claims 1, 5, 6, 8, and 9 respectively and essentially rejected for the same reasons as discussed above.

## Contact Information

5.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mohammad Ali whose telephone number is (703) 605-

4356.  The examiner can normally be reached on Monday to Thursday from 7:30am-

6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703)

306-5631.  The fax phone number for the organization where this application or

proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a

general nature or relating to the status of this application or proceeding should be

directed to the receptionist whose telephone number is (703) 305-9600.


Mohammad Ali

Patent Examiner

AU 2177


MA

July 11, 2004